

Appl. No. 10/580,153
Amtd. dated Oct. 24, 2008
Reply to Office action of June 26, 2008

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-10. (Canceled)

11. (Currently amended) A rotary leadthrough of a fourth axle of a Delta robot arm, the rotary leadthrough comprising

a housing,

a shaft located in an axial leadthrough of the housing and is rotatably supported in that the housing, for connection to the robot arm, and

at least one opening two unobstructed openings in the housing for cleaning the axial leadthrough, one of the at least two openings being a flushing opening and one of the at least two openings being a suction opening.

the shaft having a reduced diameter extending over a portion of its length, which diameter is less than the diameter of the axial leadthrough in that a corresponding region of the axial leadthrough, thereby providing a void between the shaft and the axial leadthrough.

12. (Previously presented) The rotary leadthrough in accordance with claim 11, wherein at least two openings are located in a radial direction to the axial leadthrough.

13. (Previously presented) The rotary leadthrough in accordance with claim 11, wherein the void is an annular gap.

14. (Currently amended) The rotary leadthrough in accordance with claim 11 A rotary leadthrough of a fourth axle of a Delta robot arm, the rotary leadthrough comprising a housing,

a shaft located in an axial leadthrough of the housing and is rotatably supported in that housing, for connection to the robot arm, and
at least one opening in the housing for cleaning the axial leadthrough, the shaft having a reduced diameter extending over a portion of its length, which diameter is less than the diameter of the axial leadthrough in a corresponding region of the axial leadthrough, thereby providing a void between the shaft and the axial leadthrough,

wherein the housing comprises a cylindrical securing ring, which on at least one and preferably on two diametrically opposed sides side has a circular-segment-shaped radial groove; wherein the shaft comprises an annular groove, which is aligned with the at least one circular-segment-shaped radial groove in the same plane; and wherein the rotary leadthrough comprises at least one segmental disk, which can be brought into engagement with one each of the at least one circular-segment-shaped radial groove and the annular groove for rotatably supporting the shaft in the housing.

15. (Currently amended) The rotary leadthrough in accordance with claim 12, A rotary leadthrough of a fourth axle of a Delta robot arm, the rotary leadthrough comprising a housing,

a shaft located in an axial leadthrough of the housing and is rotatably supported in that housing, for connection to the robot arm, and

at least one opening in the housing for cleaning the axial leadthrough, the shaft having a reduced diameter extending over a portion of its length, which diameter is less than the diameter of the axial leadthrough in a corresponding region of the axial leadthrough, thereby providing a void between the shaft and the axial leadthrough, wherein at least two openings are located in a radial direction to the axial leadthrough;
wherein the housing comprises a cylindrical securing ring, which on at least one and preferably on two diametrically opposed sides side has a circular-segment-shaped radial groove; wherein the shaft comprises an annular groove, which is aligned with the at least one circular-segment-shaped radial groove in the same plane; and wherein the rotary leadthrough comprises at least one segmental disk, which can be brought into engagement with one each of the at least one circular-segment-shaped radial groove and the annular groove for rotatably supporting the shaft in the housing.

16. (Previously presented) The rotary leadthrough in accordance with claim 14, wherein the annular groove is located in a cylindrical head portion of the shaft, and wherein the

cylindrical head has an outer diameter which corresponds to an inner diameter of the securing ring.

17. **(Previously presented)** The rotary leadthrough in accordance with claim 15, wherein the annular groove is located in a cylindrical head portion of the shaft, and wherein the cylindrical head has an outer diameter which corresponds to an inner diameter of the securing ring.

18. **(Previously presented)** The rotary leadthrough in accordance with claim 11, wherein the shaft further comprises a connection journal on one end, for securing to a joint, and a securing element, on a diametrically opposite end, for securing a grasping element.

19. **(Previously presented)** The rotary leadthrough in accordance with claim 12, wherein the shaft further comprises a connection journal on one end, for securing to a joint, and a securing element, on a diametrically opposite end, for securing a grasping element.

20. **(Previously presented)** The rotary leadthrough in accordance with claim 14, wherein the shaft further comprises a connection journal on one end, for securing to a joint, and a securing element, on a diametrically opposite end, for securing a grasping element.

21. **(Previously presented)** The rotary leadthrough in accordance with claim 16, wherein the shaft further comprises a connection journal on one end, for securing to a joint, and a securing element, on a diametrically opposite end, for securing a grasping element.

22. **(Previously presented)** The rotary leadthrough in accordance with claim 18, wherein the securing element comprises a star-shaped body portion.

23. **(Previously presented)** The rotary leadthrough in accordance with claim 19, wherein the securing element comprises a star-shaped body portion.

24. **(Previously presented)** The rotary leadthrough in accordance claim 11, wherein the housing is made of plastic and/or the shaft is made from an aluminum alloy.

25. **(Previously presented)** The rotary leadthrough in accordance claim 14, wherein the housing is made of plastic and/or the shaft is made from an aluminum alloy.

26. **(Previously presented)** The rotary leadthrough in accordance claim 16, wherein the housing is made of plastic and/or the shaft is made from an aluminum alloy.

27. **(Previously presented)** The rotary leadthrough in accordance with claim 12, wherein a first of the at least two openings is a suction extraction opening, and at least a second of the

least two openings is an inflation opening, and wherein the suction extraction opening has a larger diameter than the inflation opening.

28. **(Previously presented)** The rotary leadthrough in accordance with claim 14, wherein a first of the at least two openings is a suction extraction opening, and at least a second of the least two openings is an inflation opening, and wherein the suction extraction opening has a larger diameter than the inflation opening.

29. **(Previously presented)** The rotary leadthrough in accordance with claim 27, wherein the suction extraction opening and the inflation opening are located at an angle of at least approximately 90° to one another.

30. **(Previously presented)** The rotary leadthrough in accordance with claim 28, wherein the suction extraction opening and the inflation opening are located at an angle of at least approximately 90° to one another.